

DERWENT-ACC-NO: 1988-315396

DERWENT-WEEK: 198845

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TITLE: Defining a pattern in a metal oxide  
layer - uses  
localised annealing by radiation-beam  
which generates a  
different etch-rate

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PRIORITY-DATA: 1986DD-0289740 (April 29, 1986)

PATENT-FAMILY:

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APPLICATION-DATA:

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INT-CL (IPC): C03C017/23

ABSTRACTED-PUB-NO: DD 258000A

BASIC-ABSTRACT:

Layers of pref. In-, Sn- or Cd-oxide or mixts. of these are deposited on substrates, pref. of glass, ceramic or semiconducting material by fast

plasmatron sputtering. The substrate is cooled and/or a reduced oxygen to metal ratio is used. Also claimed is the use of cathodic sputtering with a reduced oxygen/meta ratio or deposition of a metal-rich intermediate layer during part of the processing.

During a subsequent localised anneal the required patterns are defined, the unannealed parts of the layer are etched away in an etchant and during a processing time which ensures negligible attack occurs of the annealed parts.

The annealing is pref. carried out using an electron beam or electromagnetic radiation, esp. using a laser. The etching is carried out at an acid concn. of less than 0.1 mole/l. without heating, resulting in an etch rate for the unannealed layer of 10 nm/min.

USE/ADVANTAGE - Process avoids the problems of current processes, e.g. under-etching, edge-modification and photolithographic faults. The etching can be carried out with dilute acids at room temp. and using short etching times, which reduces processing cost and pollution. The accuracy of deflection of electron beam or laser ensures excellent pattern accuracy. In the latter case shadow masks may be used. The method is used for the mfr. of transparent electrodes for matrix LCD.

CHOSEN-DRAWING: Dwg. 0/8

TITLE-TERMS: DEFINE PATTERN METAL OXIDE LAYER LOCALISE ANNEAL RADIATE BEAM  
GENERATE ETCH RATE

DERWENT-CLASS: L03 U11 U14 X12

CPI-CODES: L03-A02A; L03-G05B;

EPI-CODES: U11-C05C2; U11-C05C7; U11-C05D3; U11-C18D; U14-H01E; U14-K01A2;  
X12-D02A;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1504U; 1515U ; 1531U

SECONDARY-ACC-NO:

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Non-CPI Secondary Accession Numbers: N1988-239128